AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for identifying heterologous DNA ~~and the mRNA transcribed therefrom,~~ which causes, on its expression, an electrophysiological change in a cell comprising the steps of:

(i) providing a substrate for making the electrophysiological measurements upon which at least one cell can be arranged on the substrate comprising a first surface part and an opposite second surface part, wherein the first part has a plurality of sites each of which is adapted to hold an ion channel-containing structure;

(ii) providing a plurality of cells, each cell comprising a different heterologous DNA sequence, wherein each cell expresses the heterologous DNA sequence it comprises:

(iii) arranging the plurality of cells provided in step (ii) on the substrate to permit ~~simultaneous~~ detection and/or measurement of a change (in comparison to a control cell) in the electrophysiology of each cell in a whole cell configuration method of patch-clamping, said change being a result of expression of the heterologous DNA sequence, and

(iv) identifying at least one cell of interest, which shows a change in its electrophysiology as measured in step (iii), characterized in that, the method comprises the further steps of:

isolating the cell of interest, and/or genetic material therefrom; and isolating mRNA from the cell of interest showing a change in its electrophysiology as measured in step (iii).

2. (Previously Presented) The method as claimed in Claim 1, wherein the method further comprises the step of sequencing the genetic material.

3. (Withdrawn) The method as claimed in Claim 2, wherein the method further comprises the step of storing or recording the sequence information on an information carrier.

4. - 6. (Cancelled)

7. (Previously Presented) The method as claimed in Claim 1, wherein each different heterologous DNA sequence is part of a cDNA library.

8. (Previously Presented) The method as claimed in Claim 1, wherein the change in the electrophysiology of the cell is detected and/or measured by patch clamping.

9. (Previously Presented) The method as claimed in Claim 1, wherein the cell is treated with a test agent before step (iii).

10. (Previously Presented) The method as claimed in Claim 9, wherein the test agent is selected from at least one of the following: small organic molecules, small peptides, neurotransmitters, hormones and cytokines.

11. (Previously Presented) The method as claimed in Claim 1, wherein the cell is an animal cell.

12. (Previously Presented) The method as claimed in Claim 1, wherein the animal cell is selected from: Human Embryonic Kidney 293 (HEK293), Chinese Hamster Ovary (CHO), COS, MDCK, NG108, NIH3T3 or T84.

13. (Previously Presented) The method as claimed in Claim 1, wherein the cells are arranged at spaced-apart locations on the substrate.

14. (Withdrawn) The method as claimed in Claim 3, wherein said information carrier is a computer disk.

15. (New) The method as claimed in claim 1, wherein cells are arranged at spaced apart locations on the substrate and individual whole cells are brought in contact with the substrate at a measuring site one at a time, wherein individual whole cells being tested are spaced apart from cells awaiting testing and cells that have already been tested.